

PROVISIONAL GEOLOGIC MAP OF THE SMITHFIELD QUADRANGLE, CACHE COUNTY, UTAH

**FORMATION** 

**SURFICIAL DEPOSITS** 

WATER CANYON

**FORMATION** 

**LAKETOWN** 

DOLOMITE

FISH HAVEN DOLOMITE

**SWAN PEAK** 

**FORMATION** 

**GARDEN CITY** 

**FORMATION** 

**UPPER MEMBER** 

**WORM CREEK MBR.** 

NOUNAN

**FORMATION** 

**BLOOMINGTION** 

**FORMATION** 

**BLACKSMITH FORMATION** 

**UTE FORMATION** 

LANGSTON FORMATION

**GEERTSEN** 

CANYON(?)

**QUARTZITE** 

MUTUAL(?)

**FORMATION** 

BRIGHAM

4500

4300

Qdn<sub>1</sub> Qlf

TD 102

MINK CREEK MBR.

CACHE VALLEY MBR.

SYMBOL

Tslm

Tslc

Dwc

SI

Ofh

Osp

Ogc

€sc

€wc

€n

€bo

€b

€u

€l

€p€gc

(meters)

feet

800(244)

606(185)

1,459(445)

140(43)

401(122)

1,405(428)

(274) 1,015

1,125(343)

1,495(456)

485(148)

745(227)

360(110)

2,549(777)

1,800-2,300

TD 210

(550-700)

(309)

LITHOLOGY

SOURCE AND LOCATION OF

**MEASURED THICKNESS** 

(Some thicknesses were measured outside of the Smithfield quadrangle)

Adamson and others (1955),

Taylor (1963), Logan Canyon

Budge (1966), Logan Canyon

Williams (1948), Green Canyon

Galloway (1970), Green Canyon

Williams (1948), Green Canyon

Maxey (1941), High Creek

Maxey (1941), High Creek

Maxey (1958), High Creek

Maxey (1958), High Creek

Maxey (1958), High Creek

Galloway (1970), Birch Canyon

Galloway (1970), Birch Canyon

Galloway (1970), Birch Canyon

Thicknesses of surficial deposits are estimated

 $\mathbf{B}'$ 

4400

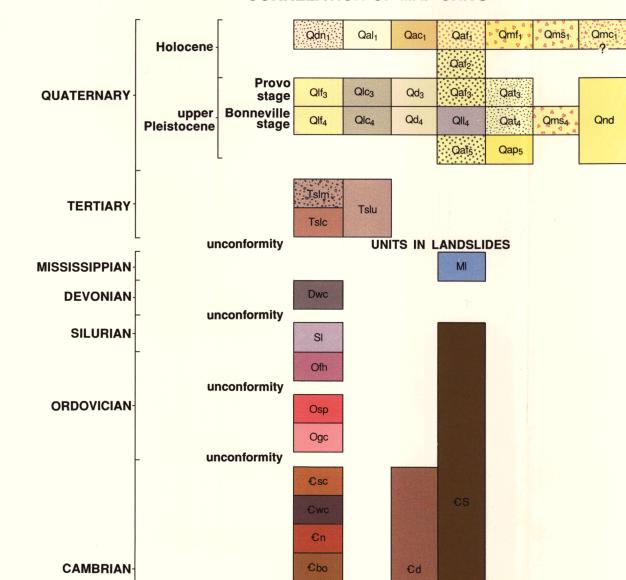
4300

TD 302

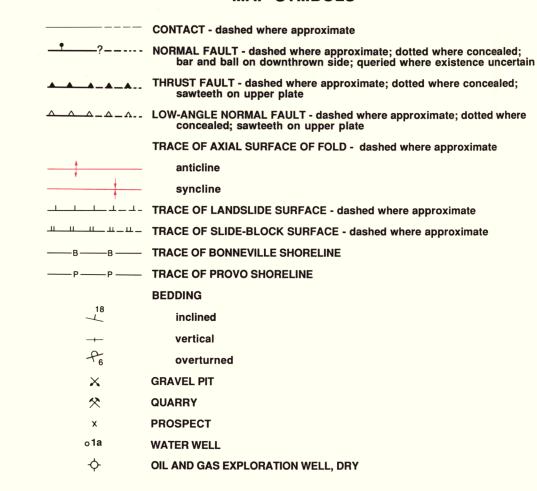
PRECAMBRIAN-

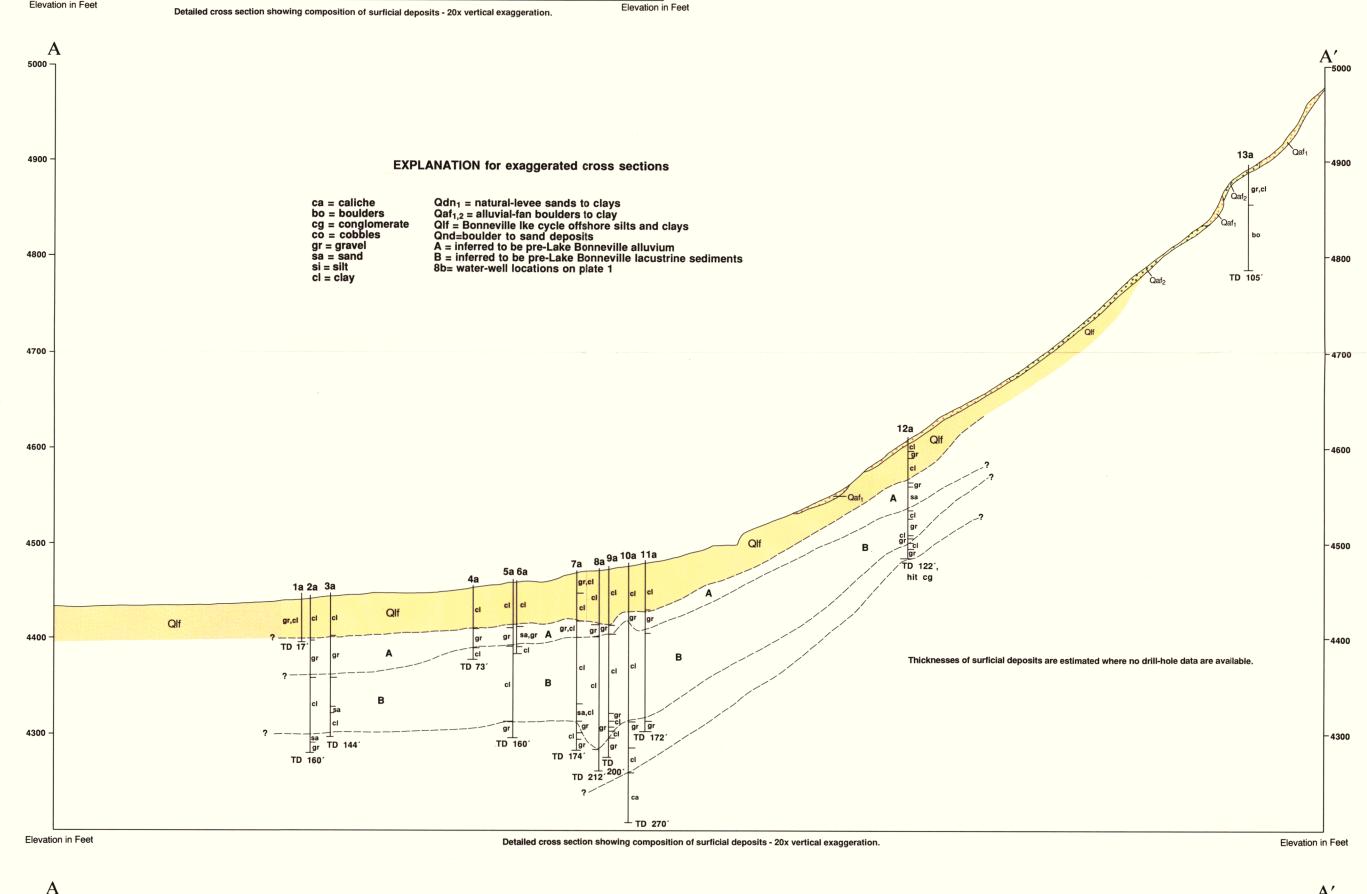
southeast of Smithfield

## CORRELATION OF MAP UNITS

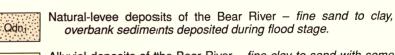


## MAP SYMBOLS





## **DESCRIPTION OF MAP UNITS**



Alluvial deposits of the Bear River - fine clay to sand with some Qal<sub>1</sub> medium and coairse sand; channel deposits. Alluvial and colluvial deposits along axes of mountain drainages -

Qac<sub>1</sub> boulders to clay, mixed colluvial, fluvial, and alluvial-fan Younger post-Lake Bonneville alluvial-fan deposits - boulders to Qaf<sub>1</sub>.

Debris-flow deposits - surficial deposits displaced downslope as a Qmf<sub>1</sub> viscous slurry flow.

Slump and landslide deposits - bedrock and surficial deposits Qms<sub>1</sub> displaced downsllope. Colluvial and slope-wash deposits - boulders to clay mantling Qmc<sub>1</sub>

bedrock.

Older post-Lake Bonneville alluvial-fan deposits—boulders to clay. Qaf<sub>2</sub>

Lacustrine offshore deposits - silt and clay deposited when Lake Qlf<sub>3</sub> Bonneville stood at the Provo shoreline. Lacustrine nearshore deposits - cobbles to fine sand deposited

Qlc<sub>3</sub> when Lake Bonneville stood at the Provo shoreline. Deltaic deposits - cobbles to fine sand deposited when Lake Qd<sub>3</sub> Bonneville stood at the Provo shoreline.

Alluvial-fan deposits - boulders to clay; deposits are graded to

Qaf<sub>3</sub> Provo shoreline Terrace deposits - cobbles to sand deposited by streams, graded Qat<sub>3</sub> to the Provo shoreline.

Lacustrine offshore deposits - fine sand, silt, and clay deposited Qlf<sub>4</sub> when Lake Bonneville stood at the Bonneville shoreline.

Lacustrine nearshore deposits - cobbles to sand, deposited when Qlc<sub>4</sub> Lake Bonneville stood at the Bonneville shoreline.

Deltaic deposits - cobbles to fine sand deposited when Lake Qd<sub>4</sub> Bonneville stood at the Bonneville shoreline.

agoon deposits - sand- to clay-size sediments deposited in QII<sub>4</sub> lagoons when Lake Bonneville stood at the Bonneville shoreline. Terrace deposits – cobbles and sand deposited by streams, graded

Qat<sub>4</sub> to the Bonneville shoreline. Slump and landslide deposits - bedrock and surficial deposits

Qms<sub>4</sub> displaced downslope; poorly developed Bonneville shoreline cut on deposits. Pre-Lake Bonneville alluvial-fan deposits – boulders to clay; only Qaf<sub>5</sub>

exposed in road cut. Pediment deposits – boulders to clay covering flat surfaces formed

Qap<sub>5</sub> primarily on the Tertiary Salt Lake Formation.

Boulder to sand deposits of unknown origin. Qnd

Salt Lake Formation

Mink Creek Conglomerate Member - light-gray to light-yellow tuffaceous conglomerate.

Cache Valley Member – light-colored tuff, limestone, sandstone, Tslc and conglomerate.

Salt Lake Formation, undifferentiated – poorly exposed in area Tslu north of Smithfield Canyon.

Mississippian limestone - dark-gray limestone containing abundant brachiopods and bryozoans, part of ancient landslide mass.

lower clayey dolomite, upper sandstone and sandy dolomite.

Laketown Dolomite - light-gray and dark-gray dolomite. SI

Fish Haven Dolomite - thick-bedded, medium-crystalline, dark-Ofh gray dolomite.

Swan Peak Formation - olive-gray shale, quartzitic siltstone, medium-gray limestone, and dark-gray shale in lower part, gray and red-purple quartzite and gray shale in middle part; light-gray quartzite at top.

Garden City Formation - lower member consists of muddy limestone, crystalline limestone, and intraformational conglomerate: upper member is mostly limestone with some dolomite, and contains nodules and stringers of black chert.

Cambrian-Silurian units - carbonates of Cambrian-Silurian age which are part of an ancient landslide.

Cambrian(?) dolomite - dolomite believed to be of Cambrian age.

St. Charles Formation

upper member – thin-bedded limestone at the base followed by massive-bedded, light-gray and dark-gray dolomite.

Worm Creek Quartzite Member - gray quartzite, light-gray sandy limestone, and coarsely crystalline, light-gray, sandy

Nounan Formation – *light-gray and medium-gray dolomite, sandy in* 

Bloomington Formation – Hodges Shale at bottom is green shale and gray limestone; middle member is medium-gray and darkgray limestone; upper member, Call's Fort Shale, is olive-brown shale and gray limestone.

Blacksmith Formation - gray dolomite in lower part, dark-bluishgray limestone in middle, light-gray dolomite at top.

Ute Formation – alternating thin-bedded, medium-gray limestone and dusky-yellow shale; some interbedded sandstone at base.

Langston Formation - lower member, Naomi Peak Limestone, is calcareous sandstone at base and interbedded limestone and shale at top; middle member, Spence Shale, moderate-brown shale with limestone lenses at base and light-olive-gray shale at top; upper member is dark-gray dolomite with some limestone in upper part.

Precambrian-Cambrian quartzite – severely brecciated quartzite of Precambrian to Cambrian age, only located in the Crow Moun-Brigham Group

Geertsen Canyon(?) Quartzite - pink, orange, brown, purple, and gray quartzite interbedded with yellow-brown shale and yellowbrown sandstone.

Mutual(?) Formation – pale-red-purple, grayish-orange-pink, grayish-orange, white, gray, pink, pinkish-gray, and brown quartzite containing locally abundant pebbles of quartzite and jasper; interbedded with red, green, and gray to lavender argillite; contains basalt flows.

Elevation in Feet

Stacked units – indicate thin or discontinuous cover of one unit over another unit; the cover unit is listed first and its color and pattern are shown.

Brecciated

